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**JOINT DATA SYSTEMS  
SUPPORT CENTER**

TECHNICAL MEMORANDUM  
TM 406-91  
15 JANUARY 1991

**OPERATIONAL CONCEPT DOCUMENT  
FOR THE  
MAPPING AND GRAPHIC  
INFORMATION CAPABILITY (MAGIC)**

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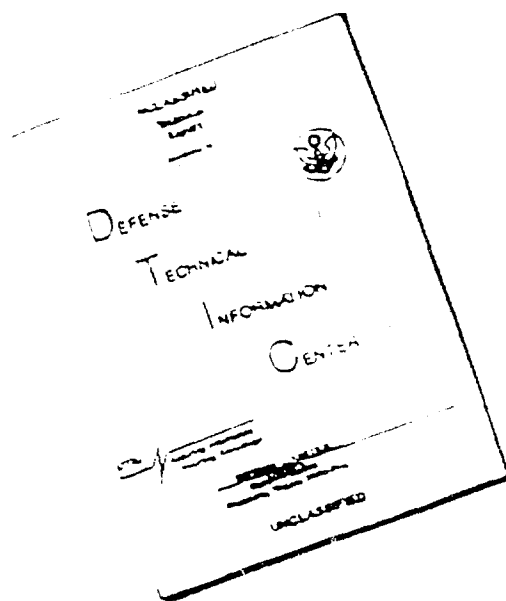
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JOINT DATA SYSTEMS SUPPORT CENTER

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OPERATIONAL CONCEPT DOCUMENT  
FOR THE  
MAPPING AND GRAPHIC INFORMATION CAPABILITY (MAGIC)

SUBMITTED BY:

*Velma R. Blue*

*for* Jeanne L. Muenzen  
Acting Chief  
Information Systems Branch

APPROVED BY:

*Thomas R. Epperson*

Thomas R. Epperson  
Deputy Director  
NMCS ADP Directorate

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# ACKNOWLEDGMENT

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# ABSTRACT

This Operational Concept Document (OCD) describes the mission of the Mapping and Graphic Information Capability (MAGIC) and its operational and support environments. It also describes the functions and characteristics of MAGIC within the overall computer system.

The OCD is divided into three major sections. These sections cover Mission (Section 3), System Functions and Characteristics (Section 4), and Government Agencies (Section 5).

This document supersedes the Operational Concept Document for the Graphic Information Presentation System (GIPSY) that was dated 30 September 1988.

## SECTION 1. SCOPE

This section provides an introduction to the document. The following paragraphs define the scope of the document by providing the identification and purpose of the Mapping and Graphic Information Capability (MAGIC) and presenting an introduction to the rest of the document.

### 1.1 Identification

This Operational Concept Document (OCD) describes the mission of MAGIC and its operational and support environments. It also describes the functions and characteristics of the computer system within the overall system.

### 1.2 Purpose

The MAGIC effort has evolved from and will build upon the modernization of the WWMCCS standard host-based Graphic Information Presentation System (GIPSY) and the Z-248 PC-based modernized GIPSYmate system.

Designed and developed to meet the needs of a new generation of Worldwide Military Command and Control System (WWMCCS) users, MAGIC will be fielded as a resident system on the WWMCCS Workstation (WWS) and will present a menu-based graphical user interface (GUI) to the user that integrates (as transparently as feasible) the Commercial Off-the-Shelf (COTS) packages also resident on that platform. Processing facilities appropriate to both sophisticated and novice users will be supported as well as the ability to access the full range of database types found on the WWMCCS host (H6000).

Functionally, the MAGIC user will have the capability to perform data retrieval and manipulation operations, business graphics displays, geographic and geodetic mapping displays, slide show generation, and graphic editing operations.

### 1.3 Introduction

This OCD describes MAGIC's mission as well as its operational and support environments. It also describes the functions and characteristics of MAGIC within the overall WWMCCS environment. As such, this document represents the complete operational concept to be used in MAGIC's development under the DOD-STD-2167A life cycle.



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## SECTION 2. REFERENCED DOCUMENTS

This section contains a listing of all documents used in the preparation of this document. A detailed bibliography appears as paragraph 6.1. Technical society and technical association specifications and standards are generally available for reference from libraries. They are also distributed among technical groups and using Federal Agencies.

### SPECIFICATIONS:

CSM UM 259-85	Graphic Information Presentation System (GIPSY) Users Manual
CSM UM 305-87	GIPSYmate Users Manual
DI-MCCR-80023	Operational Concept Document Data Item Description (DID)
SDP 2-90	Software Development Plan (SDP) for Mapping and Graphic Information Capability System (MAGIC)
SPM SS 161-88	System Design Document for the Modernized GIPSYmate System
<reference>	Functional Description for the Graphic Information Presentation System (GIPSY)
<reference>	Software Quality Program Plan for Mapping and Graphic Information Capability System (MAGIC) (Draft)

### STANDARDS:

DOD-STD-2167A	Defense System Software Development
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### DRAWINGS:

None

### OTHER PUBLICATIONS:

PM 1-90	Documentation Standards and Publications Style Manual
TM 405-90	Software Standards and Procedures Manual for the JNGG Graphics Program

Copies of the specifications, standards, drawings, and publications required by suppliers in connection with specified procurement functions should be obtained from the contracting agency or as directed by the contracting officer.

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### SECTION 3. MISSION

The following paragraphs define and describe the mission to be fulfilled by MAGIC in the WWMCCS environment.

#### 3.1 Mission Need Requirements

MAGIC is an outgrowth of two older systems--GIPSY and GIPSYmate. As such, MAGIC evolved to satisfy the graphic needs of the NMCS. Capability requirements were extracted from the documents identified below:

- a. Functional Description for the Graphic Information Presentation System (GIPSY)
- b. GIPSYmate Users Manual
- c. Graphic Information Presentation System (GIPSY) Users Manual
- d. System Design Document for the Modernized GIPSYmate System.

#### 3.2 Primary Mission(s)

MAGIC has two primary missions which can be further subdivided for better understanding:

- a. To provide a basic, user-oriented, graphics capability (in both graphic and alphanumeric forms) to the WWMCCS community:
  - (1) Primarily oriented toward the decision-maker who knows the data but not the intricacies of data processing
  - (2) May be interfaced with an application to provide graphic support or as an independent stand-alone graphic information system.
- b. To provide the necessary technical assistance (in the form of a comprehensive graphics and information display capability) to the Joint Data Systems Support Center (JDSSC) in support of the Joint Chiefs of Staff (JCS):
  - (1) Director for Operations (J-3)
  - (2) Director for Manpower and Personnel (J-1)
  - (3) Secretary, Joint Chiefs of Staff (SJCS)
  - (4) Joint Special Operations Agency (JSOA)
  - (5) Office of the Secretary of Defense/Director, Program Analysis and Evaluation (OSD/PA&E)

- (6) Assistant Secretary of Defense for International Security Policy (ASD/ISP)
- (7) Director for Command, Control, and Communications Systems (J-6)
- (8) Director for Information Resource Management (DIRM)
- (9) The Department of Defense (DOD) at large.

### 3.3 Secondary Mission

A secondary mission is to provide enhanced comprehensive graphics capabilities based upon requirements defined and refined by the user community after exposure to the product. This means that MAGIC will adapt and improve as user feedback is provided. Enhancement of current functionality, the addition of completely new capabilities, and support for new hardware configurations are the methods whereby this mission is supported.

### 3.4 Operational Environment

MAGIC's deployed environment will be the Unix-based WWMCCS Workstation (WWS). The WWS may optionally be connected to the WWMCCS host platform (H6000/DPS8000) to permit remote access to the user's data on the mainframe, but such a configuration is not mandatory. MAGIC will operate in stand-alone mode on the Unix workstation as its default mode.

The workstation would require the following minimum configuration:

#### a. Hardware configuration:

- (1) WWMCCS Workstation
- (2) Color monitor
- (3) 8 Megabytes (Mb) of Random Access Memory (RAM)
- (4) 2 Mb of free disk space
- (5) 16 Mb of swap space
- (6) Tape Backup Unit (tar format)
- (7) PostScript printer (optional).

#### b. Software configuration:

- (1) Unix operating system
- (2) X Windows, Version 11, Release 3

- (3) OSF/Motif, Version 1.0.A
- (4) Oracle Relational Database Management System (RDBMS)
- (5) Wingz, Release 1.0
- (6) DeLorme Mapping System (DMS) for Unix
- (7) Microsoft PowerPoint, Release 2.01.

### 3.5 Support Environment

The following subparagraphs briefly describe the support environment for MAGIC.

3.5.1 Development Support Environment. The prototype system will be developed on the Sun Scalable Processor Architecture (SPARC)station. The environment will be comprised of the following hardware:

- a. Sun SPARCstation
- b. Sun cg3/6 color monitor
- c. 8 megabytes (Mb) of Random Access Memory (RAM)
- d. 2 Mb of free disk space
- e. 16 Mb of swap space
- f. Sun Desktop Backup Pack (DC6150 media).

The software composition of the support environment will be:

- a. SunOS, Version 4.0.3c
- b. X Windows, Version 11, Release 3 (X11R3)
- c. OSF/Motif, Release 1.0.A
- d. Oracle RDBMS, Version 6.0.27
- e. Oracle SQL\*Plus, Version 3.0.6.5.1
- f. Oracle SQL\*Loader, Version 1.0.18
- g. Wingz, Release 1.0
- h. OpenWindows, Release 1.0
- i. Sun Microsystems C compiler and linker

j. DeLorme Mapping System (DMS) for Unix

k. Microsoft PowerPoint, Release 2.01.

3.5.2 Fielded Support Environment. The production system will be fielded on the WWMCCS Workstation (assumed to be the Macintosh IIfx). The environment will be comprised of the following hardware:

- a. WWMCCS Workstation (WWS)
- b. Color monitor
- c. 8 Mb of RAM
- d. 2 Mb of free disk space
- e. 16 Mb of swap space
- f. PostScript printer (optional).

The software composition of the support environment will be:

- a. Apple/Unix (A/UX), Version 2.0 with SecureWare
- b. X Windows, Version 11, Release 3 (X11R3) server
- c. Motif window manager with SecureWare
- d. Oracle RDBMS
- e. Wingz
- f. DeLorme Mapping System (DMS) for Unix/X Windows
- g. Microsoft PowerPoint, Release 2.01.

## SECTION 4. SYSTEM FUNCTIONS AND CHARACTERISTICS

This section will define and describe MAGIC's system functions and characteristics in the paragraphs which follow.

### 4.1 System Functions

MAGIC is comprised of eight Computer Software Configuration Items (CSCIs): Human Interface, Data Management, Business Graphics, Geographic Mapping, Graphic Editor, Slide Show, Internal Processing, and Programmer Utilities. The functions that each of these CSCIs will perform appear in the following subparagraphs.

4.1.1 Human Interface. The Human Interface CSCI functions as the logical hub of all MAGIC processing activities and presents a user-friendly graphical user interface (GUI) to the user that is compliant with Open Software Foundation (OSF)/Motif. The user may choose menu selections with either keystrokes or mouse clicks and dialog boxes are provided for those instances when the user is required to provide additional information before MAGIC can continue processing.

When a user initiates a MAGIC session, the program menus are presented to the user, and control of program actions begins in this CSCI. As users navigate through the menu system to an activity they want to perform, control is eventually passed to the appropriate functional CSCI (or Commercial Off-The Shelf (COTS) package), such as Data Management or Business Graphics, to perform the desired activity. The Human Interface CSCI also provides context-sensitive help that is compliant with Motif applications.

The following functions must be performed by the Human Interface CSCI:

- a. Initialize MAGIC
- b. Parse user selections, choices, and language input
- c. Recognize interactive operating system commands (i.e., JDAC & TSS commands)
- d. Define and name a group of GIPSY statements which may be subsequently executed through reference to the defined name via an application (i.e., DO PROCESS)
- e. Execute a GIPSY application which prompts the user for input
- f. Perform interactive error detection and handling
- g. Provide an on-line interactive help facility
- h. Allocate and initialize the Directive Action File Control (DAFC) file



- i. Establish workstation environment to X Windows
- j. Access statistics file
- k. Use OSF/Motif to provide the graphical user interface.

4.1.2 Data Management. The Data Management CSCI enables the user to access data from user databases located on either the WWMCCS host or the WWMCCS Workstation (WWS). The WWS databases may be Oracle relational database tables to which the user has access or flat American Standard Code for Information Interchange (ASCII) files. Data in the databases is selected by a user according to a qualification criterion; the resulting data subset can then be manipulated and presented as user-formatted reports, statistical graphs, and geographic displays.

The following functions must be performed by the Data Management CSCI:

- a. Identify the user's data file
- b. Describe data records
  - (1) File Descriptor Table (FDT)
  - (2) Adding to the Index File
  - (3) Augmenting an existing File
    - (a) Extended fields
    - (b) Global fields
    - (c) Qualify fields
    - (d) Specific field references
- c. Identify any conditional expressions
- d. Identify any arithmetic expressions
- e. Retrieve data
- f. Modify data
  - (1) In-line modification
  - (2) User subroutine modification
  - (3) Record output table
  - (4) Field table

g. Manipulate data

- (1) Modify Qualified Data Table (QDT)
- (2) Add new fields
- (3) Sort Qualified Data File (QDF) (also re-sort)
- (4) Qualify data
- (5) Field table QDF
- (6) Field table qualify
- (7) Field table call

h. Populate a database or a data file.

4.1.3 Business Graphics. The Business Graphics CSCI enables the MAGIC user to create and display reports. Each report consists of data selected from a previously identified MAGIC internal format subset of a database. This CSCI gives the user the flexibility to display a report in a form most suited to the user's needs, varying from simple formatted reports to line graphs and pie charts. The Wingz COTS package has been used to provide the user with two levels of support: an assisted mode, which helps the user in constructing reports and graphs, and an unassisted mode in which the user is simply placed into raw Wingz.

The following functions must be performed by the Business Graphics CSCI:

- a. Build a tabular report
- b. Display a tabular report
- c. Modify a tabular report
- d. Enhance a tabular report
- e. Save a tabular report
- f. Access a previously saved tabular report
- g. Build a new report
  - (1) Assign function
  - (2) Delete function
  - (3) Rename function

- (4) Subset function
- (5) Change function
- (6) Define function
- (7) Add function
- (8) Input function
- (9) Review function
- h. Create and display graphic reports
  - (1) Bar graphs
  - (2) Histograms
  - (3) Point graphs
  - (4) Line graphs
  - (5) Curve graphs
  - (6) Step graphs
  - (7) Gantt charts
  - (8) Pie charts
- i. Modify a graphic report
  - (1) Limiting rows, columns, section, categories
  - (2) Adding report totals
  - (3) Vector sequencing
- j. Display the classification of graphic report
  - (1) Report titles
  - (2) Clear class
- k. Explode the wedges in a pie chart
- l. Stack the bars in a bar graph
- m. Enhance graphic reports with symbols and text

- n. Control graph features including size, color, shading, and style of line
- o. Save a graphic report
- p. Save plotted output.

4.1.4 Geographic Mapping. The Geographic Mapping CSCI will provide an integrated mapping capability that utilizes a DeLorme Mapping System (DMS) with the following capabilities:

- a. All digital mapping system with data resolution to 1 centimeter
- b. Capable of displaying vector data, scanned paper map data, scanned aerial photography data, digital satellite imagery, either separately or merged
- c. Capable of accessing and displaying digital geographic data at any location and level of detail in an average of 6 seconds or less from a database of many gigabytes
- d. Capable of linking with an external relational database
- e. Global vector database at 1:3,000,000 level of detail, with select areas at higher detail
- f. Capable of centering the screen at any location on the Earth's surface
- g. Full declutter capabilities for vector data
- h. Display data in 22 levels, from a world view to a view that shows an area 40 feet across
- i. Overlay capabilities with text, lines, fills, circles, boxes, and military, cartographic, and user-defined symbols
- j. Overlays are geographically referenced for proper placement under pan and zoom operations
- k. Special utilities such as Great Circle route computation, lat/lon and UTM grids, projections, etc.

The following functions must be performed by the Geographic Mapping CSCI:

- a. Define the map
  - (1) Map file
  - (2) Map file details

- (3) Map area
- (4) Map projection
- b. Build geographic display
  - (1) Grids
  - (2) Symbols
  - (3) User-defined characters
  - (4) Track plot
- c. Generate geographic display
- d. View geographic display
- e. Modify geographic display
- f. Save geographic display.

4.1.5 Graphic Editor. The Graphic Editor CSCI provides an interactive capability to enhance existing slides, create new slides, and edit multiple slides simultaneously.

The following functions must be performed by the Graphic Editor CSCI:

- a. Compose drawings
  - (1) Standard draw functions
    - (a) Freehand drawing
    - (b) Create a line
    - (c) Create a rectangle
    - (d) Create a circle
    - (e) Create a polygon
    - (f) Create an arc
    - (g) Create an ellipse
    - (h) Fill.
  - (2) Rubberband technique draw functions

- (a) Create a symbol
- (b) Zoom
- (c) Unzoom
- (d) Pan
- (e) Unpan
- (f) Erase
- (g) Change attributes (e.g., background color, foreground color, line width, line style, fill pattern, fill color).

b. Manage text

- (1) Enter horizontal text
- (2) Enter vertical text
- (3) Enter centered text
- (4) Set tab
- (5) Clear tab
- (6) Rotate text
- (7) Cut text
- (8) Uncut text
- (9) Copy text
- (10) Paste text
- (11) Erase text
- (12) Un-erase text
- (13) Set margins
- (14) Overwrite text
- (15) Change current text attributes (e.g., text size, text style, text spacing, text color, background color).

c. Manipulate an object

- (1) Cut an object/symbol
  - (2) Uncut an object/symbol
  - (3) Copy an object/symbol
  - (4) Paste
  - (5) Group an object into a symbol
  - (6) Split an object from a symbol
  - (7) Erase an object/symbol
  - (8) Un-erase an object/symbol
  - (9) Scale an object/symbol
  - (10) Rotate an object/symbol
  - (11) Modify object attributes (e.g., object color, line width, line style, fill pattern, fill color).
- d. Save a slide to the slide inventory
  - e. Load a new slide
  - f. Activate a loaded slide
  - g. Overlay a loaded slide
  - h. Print functions
    - (1) Add a slide to an output device queue
    - (2) List an output device queue
    - (3) Delete a slide from an output device queue
    - (4) Reorder an output device queue
    - (5) Cancel current print job.
  - i. Clear the slide.

4.1.6 Slide Show. The Slide Show CSCI provides access to two types of management capabilities. First, it allows the user to maintain an inventory of slides; and second, it provides the user the ability to organize slides into a briefing.

The following functions must be performed by the Slide Show CSCI:

- a. Modifying the slide/briefing inventory
  - (1) Rename slides
  - (2) Rename briefings
  - (3) Create briefings
  - (4) Delete briefings
  - (5) Include a slide from the slide inventory to a briefing
  - (6) Delete a slide from a briefing
  - (7) Delete a slide from the slide inventory (and from any briefings that may contain it)
  - (8) Save a slide to the slide inventory.
- b. Displaying slides
  - (1) Display any individual slide from the inventory of slides
  - (2) Display any individual slide from a briefing
  - (3) Display the next slide
  - (4) Display the previous slide
  - (5) Automatically display all slides in a briefing
  - (6) Overlay any individual slide over the currently displayed slide.
- c. Importing or exporting slides
  - (1) Copy slide
  - (2) Copy briefing
  - (3) Create backup copy
  - (4) Transfer slide to another inventory
  - (5) Transfer briefing to another inventory.
- d. Printing slides
  - (1) Add slide to queue



- (2) List queue
- (3) Delete from queue
- (4) Reorder queue
- (5) Cancel current print job.

4.1.7 Internal Processing. The Internal Processing CSCI provides capabilities that are hardware-dependant or required by more than one CSCI. This CSCI provides a multitude of services unseen by the user but critical to MAGIC functionality. As its name implies, a variety of low-level services that tie the various functional CSCIs together are provided. They are as follows:

- a. MAGIC environment initialization and cleanup
- b. File input/output (I/O) functions such as open, close, read, and write operations
- c. Functions useful to a number of MAGIC's CSCIs, such as string utilities and pathname processing
- d. Communications between the Unix workstation and the WWMCCS host platform.

The following functions must be performed by the Internal Processing CSCI:

- a. Perform file management
  - b. Control input/output operations
  - c. Save and recall all information necessary to start a new GIPSY session from the departure point of the current GIPSY session
  - d. Convert the qualified data and its internal matrix version
  - e. Generate a metafile in standardized format
  - f. Control various devices such as terminals, printers, or plotters via device drivers
  - g. Request operating system services
  - h. Perform specialize processing by executing system-supplied and user subroutines
  - i. Allow certain globals to prevail throughout a user session
- (1) Command line options

- (2) Module transfer
- (3) Classification markings
- (4) Report titles and modification
- (5) Clearing specific commands
- (6) Size of text
- (7) Color of text
- j. Color processing
- k. User control of operating environment attributes
- l. Identify GIPSY's collective input statements
  - (1) Process Control Statement (PCS)
  - (2) Clear PCS
  - (3) Save PCS
  - (4) RETURN statement
- m. Identify and save GIPSY's internal data structures
  - (1) FDT
  - (2) QDF
  - (3) QDT
  - (4) DAFC
  - (5) Graphic Data Set (GDS)
- n. Execute user-supplied subroutines
- o. Execute other TSS or JDAC commands.

4.1.8 Programmer Utilities. The Programmer Utilities CSCI will perform system development and maintenance functions. The following functions must be performed by the Programmer Utilities CSCI:

- a. Provide statistical reports about MAGIC usage
- b. Generate printed listings of MAGIC source code

- c. Sort list of source file information (i.e., sort CLIS1)
- d. Identify differences between two MAGIC source code files
- e. Update GIPSY area/location names
- f. Update GIPSY terminal definitions and capabilities
- g. Update MAGIC user help and error messages
- h. Update GIPSY World Data Base II
- i. Convert the file that contains all information necessary to start a new GIPSY session from the departure point of the current GIPSY session (i.e., the DAFC) from the Operational Test version to the Production version of GIPSY of the same release.

#### 4.2 Computer System Functions

This paragraph identifies and describes any functions (previously listed in paragraph 4.1) that are allocated to external systems (the Unix operating system on the workstation and the various host-based system services such as GCOS 8, TSS, Defender, etc.). Since all interfacing with external systems is accomplished through the Internal Processing CSCI, only functions performed within that subsystem are valid for consideration here:

- a. Perform file management
- b. Control input/output operations
- c. Control various devices such as terminals, printers, or plotters via device drivers
- d. Request operating system services
- e. Perform specialize processing by executing system-supplied and user subroutines
- f. User control of operating environment attributes
- g. Identifying GIPSY's collective input statements: clear PCS, save PCS, and the RETURN statement
- h. Identify and save GIPSY's internal data structures: FDT.

#### 4.3 Operator and User Interaction

MAGIC will execute in the Unix operating system environment on the WWMCCS Workstation platform (assumed to be a Macintosh IIx). In addition to execution on this target platform, prototype MAGIC software will be developed

for execution on a Sun Scalable Processor Architecture (SPARC) station. Since MAGIC executes on Unix-based workstations, no operator interaction is required for system operation.

Two separate operational states will be supported for MAGIC's user-interaction: assisted and unassisted. Furthermore, each state possesses two operational modes: local and remote. The type of state refers to whether or not the user will be utilizing the full range of menus, screens, and dialog boxes that MAGIC can provide. The unassisted state of operation provides basic system services to the user (system menus, help, etc.) but provides no assistance in the utilization of the various COTS packages. The type of operational mode refers to whether or not the user is executing MAGIC in stand-alone mode (the default) or as a remote workstation logged into an H6000/DPS8000 host platform.

#### 4.4 Computer System Characteristics

This paragraph identifies and describes the characteristics of MAGIC within the overall system.

4.4.1 Hardware. The computer equipment required to perform MAGIC's allocated functions has been previously discussed in paragraph 3.4 in terms of the operational support to be provided. Reference should be made to that paragraph for further details concerning MAGIC's hardware requirements.

4.4.2 Software. By nature, MAGIC is a general purpose information handling system that combines the capabilities of operational processing and database management functions. The basic software configuration has been previously discussed in paragraph 3.4 and reference should be made to that paragraph for further details regarding minimal MAGIC software requirements. Additional types of software required by MAGIC include:

- a. ANSI-compliant C compiler and linker
- b. Honeywell General Comprehensive Operating System (GCOS) 8
- c. Honeywell Time Sharing System (TSS)
- d. Graphic Information Presentation System (GIPSY).

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## SECTION 5. GOVERNMENT AGENCIES

The development and support for MAGIC rests completely with the Information Systems Branch (JNGG) with technical support provided by contractors as needed. However, listed below are a large number of user agencies:

- a. Aerospace Defense Command (ADCOM)
- b. Air Training Command (ATC)
- c. Air University (AU)
- d. Air Force Combat Operations Center (AFCOS)
- e. Air Force Data Services Center (AFDSC)
- f. Air Force Data Systems Design Center (AFDSDC)
- g. U.S. Army Command and Control Support Agency (CCSA)
- h. Commander-in-Chief, U.S. Army, Europe (CINCUSAREUR)
- i. Atlantic Command Operations Support Facility
- j. 2199th Computer Service Center
- k. 4602nd CPUSS
- l. U.S. Army War College (USAWC) Operations Group
- m. Fleet Operations Command, Europe (FOCEUR)
- n. U.S. Army Forces Command (FORSCOM)
- o. Alaskan Air Command (AAC)
- p. Air Force Systems Command (AFSC)
- q. Headquarters, U.S. Air Force (HQ USAF)
- r. Air Force Communications Command (AFCC)
- s. Air Force Manpower and Personnel Center (AFMPC)
- t. Pacific Air Forces (PACAF)
- u. Strategic Air Command (SAC)
- v. U.S. Southern Command (USSOUTHCOM)

- w. Tactical Air Command (TAC)
- x. U.S. European Command (USEUCOM)
- y. Headquarters, U.S. Marine Corps (HQ USMC)
- z. Military Airlift Command (MAC)
- aa. Atlantic Command (LANTCOM)
- ab. Military Sealift Command (MSC)
- ac. Military Traffic Management Command (MTMC)
- ad. Navy Regional Data Automation Center (NARDAC)
- ae. Naval Electronic Systems Command
- af. Joint Chiefs of Staff (JCS)
  - (1) Secretary, Joint Chiefs of Staff (SJCS)
  - (2) Manpower and Personnel Directorate (J-1)
  - (3) Operations Directorate (J-3)
  - (4) Logistics Directorate (J-4)
  - (5) Command, Control, and Communications Systems Directorate (J-6)
  - (6) Operational Plans and Interoperability Directorate (J-7)
  - (7) Joint Special Operations Agency (JSOA)
- ag. Office of the Secretary of Defense/Director, Program Analysis and Evaluation (OSD/PA&E)
- ah. Assistant Secretary of Defense for International Security Policy (ASD/ISP)
- ai. Director for Information Resource Management (DIRM)
- aj. Pacific Fleet (PACFLT)
- ak. Puget Sound Naval Shipyard
- al. Command-in-Chief, Pacific (CINCPAC)
- am. U.S. Forces, Japan

an. U.S. Forces, Korea

ao. U.S. Central Command (USCENTCOM)

ap. Commander-in-Chief, U.S. Readiness Command (USCINCRD)

aq. U.S. Western Command (WESTCOM).



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## SECTION 6. NOTES

This section contains information of general interest which aids in understanding this specification. Specifically, bibliography references to include both source and issue date are provided as well as a terms and abbreviations paragraph.

### 6.1 Bibliography

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- i. JDSSC, Software Standards and Procedures Manual for the JNGG Graphics Program, Technical Memorandum (TM) 405-90, Washington, D.C., 1 December 1990
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## 6.2 Terms and Abbreviations

The following terms, abbreviations, and acronyms specific to this document are listed below.

AAC	Alaskan Air Command
ADCOM	Aerospace Defense Command
ADP	Automated Data Processing
AFCC	Air Force Communications Command
AFCCS	Air Force Combat Operations Center
AFDSC	Air Force Data Services Center
AFDSDC	Air Force Data Systems Design Center
AFMPC	Air Force Manpower and Personnel Center
AFSC	Air Force Systems Command
ANSI	American National Standards Institute
ASCII	American Standard Code for Information Interchange
ASD/ISP	Assistant Secretary of Defense for International Security Policy
ATC	Air Training Command
AT&T	American Telephone and Telegraph
AU	Air University
A/UX	Apple/Unix operating system
CGSA	U.S. Army Command and Control Support Agency
CINCPAC	Commander-in-Chief, Pacific
CINCUSAREUR	Command-in-Chief, U.S. Army, Europe
COTS	Commercial Off-The-Shelf
CSCI	Computer Software Configuration Item
CSM	Computer System Manual
DAFC	Directive Action File Control; a file structure used by GIPSY
DI	Data Item
DID	Data Item Description
DIRM	Director for Information Resource Management
DOD	Department of Defense
DOD-STD	Department of Defense Standard
DMS	DeLorme Mapping System
DPS8000	Honeywell's Distributed Processing System # 8000
FDT	File Descriptor Table; a file structure used by GIPSY
FOCEUR	Fleet Operations Command, Europe
FORSCOM	U.S. Army Forces Command
GCOS 8	Honeywell's General Comprehensive Operating System 8
GDS	Graphic Data Set; a file structure used by GIPSY
Gigabyte	1,000 megabytes; 1,024,000,000 bytes of data
GIPSY	Graphic Information Presentation System
GIPSYmate	A PC-based system developed to permit GIPSY access to users of the WIS Early Products Workstation (an IBM 3270 PC/XT)
GUI	Graphical User Interface
HIS	Honeywell Information Systems
HQ USAF	Headquarters, U.S. Air Force
HQ USMC	Headquarters, U.S. Marine Corps

H6000 ----- Generic term for the family of Honeywell mainframe computers that include the HIS 6080--the WWMCCS host platform

IBM ----- International Business Machines, Incorporated

I/O ----- Input/Output

JCS ----- Joint Chiefs of Staff

JDSSC ----- Joint Data Systems Support Center

JN ----- NMCS ADP Directorate

JNG ----- General Applications Division

JNCG ----- Information Systems Branch

JSOA ----- Joint Special Operations Agency

JTSA-P ----- Administrative Control Branch; Pentagon Technical Resource Center, Room MF612A

J-1 ----- Director for Manpower and Personnel for the JCS

J-3 ----- Director for Operations for the JCS

J-4 ----- Director for Logistics for the JCS

J-6 ----- Director for Command, control, and Communications Systems for the JCS

J-7 ----- Director for Operational Plans and Interoperability for the JCS

LANTCOM ----- Atlantic Command

MAC ----- Military Airlift Command

MAGIC ----- Mapping and Graphic Information Capability

Mb ----- Megabyte; 1,024,000 bytes of data

MCCR ----- Mission-Critical Computer Resources

MIT ----- Massachusetts Institute of Technology

Notif ----- User interface toolkit built on the X Window System

MSC ----- Military Sealift Command

MTMC ----- Military Traffic Management Command

NARDAC ----- Navy Regional Data Automation Center

NMCS ----- National Military Command System

OGD ----- Operational Concept Document as defined in DOD-STD-2167 and its associated DID # DI-MCCR-80023

OSD ----- Office of the Secretary of Defense

OSF ----- Open Software Foundation

PACAF ----- Pacific Air Forces

PACFLT ----- Pacific Fleet

PA&E ----- Director, Program Analysis and Evaluation for the OSD

PC ----- Personal Computer

PCS ----- Process Control Statement; a file structure used by GIPSY

PM ----- Procedures Manual

PostScript ----- A general purpose, page-oriented programming language with powerful built-in graphic primitives that is marketed by Adobe Systems Incorporated

PowerPoint ----- A program for planning, composing, and creating desktop slide presentations marketed by Microsoft Corporation

QDF ----- Qualified Data File; a file structure used by GIPSY

QDT ----- Qualified Data Table; a file structure used by GIPSY

RAM ----- Random Access Memory

RDBMS ----- Relational Database Management System

SAC ----- Strategic Air Command  
 SecureWare ----- The package provided with the WWMCCS Workstation to satisfy  
 ADP security requirements  
 SDP ----- Software Development Plan as defined in DOD-STD-2167A and its  
 associated DID # DI-MCCR-80030A  
 SJCS ----- Secretary, Joint Chiefs of Staff  
 SPARC ----- Scalable Processor Architecture marketed by Sun Microsystems  
 Incorporated  
 SPM ----- System Planning Manual  
 SS ----- System Specification  
 TAC ----- Tactical Air Command  
 TM ----- Technical Memorandum as specified in JDSSC PM 1-90  
 TSS ----- Honeywell's Time Sharing System on the H6000  
 UM ----- Users Manual  
 Unix ----- A multi-tasking operating system from AT&T that executes on a  
 wide variety of computer platforms from micro to mainframe  
 USAWC ----- U.S. Army War College  
 USCENTCOM ----- U.S. Central Command  
 USCINCRD ----- Command-in-Chief, U.S. Readiness Command  
 USEUCOM ----- U.S. European Command  
 USSOUTHCOM ----- U.S. Southern Command  
 WESTCOM ----- U.S. Western Command  
 Wings ----- A spreadsheet program which has its own programming language  
 (HyperScript), drawing, and chart-making tools  
 WIS ----- WWMCCS Information Systems  
 WWMCCS ----- Worldwide Military Command and Control System  
 WWS ----- WWMCCS Workstation  
 X Windows ----- A device-independent and network-transparent windowing  
 protocol for graphics workstations developed at MIT and  
 copyrighted in 1984  
 X11R3 ----- Acronym designating X Windows version 11, release 3

# DISTRIBUTION

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JDSSC Codes	
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JNGG . . . . .	20
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